

Customer No. : 31561
Application No.: 10/064,424
Docket NO.:9407-US-PA

Claims Amendment

1. (currently amended) A laminated substrate structure comprising: ~~wherein the structure comprises a plurality of dielectric layers and a plurality of circuit layers stacked with each other, each of the dielectric layers has a plurality of via studs, and the circuit layers are electrically coupled with each other through the via studs, the laminated substrate structure is characterized by a pattern of circuit layers designed as landless~~

a plurality of embedded patterned circuits, each embedded patterned circuits comprising a plurality of patterned circuits embedded in a first dielectric layer;

a plurality of via stud layers, each via stud layer comprising a plurality of via studs encompassed by a second dielectric layer, wherein tops of the via studs are protruded from one surface of the second dielectric layer; and

a plurality of via opening layers, each via opening layer comprising a third dielectric layer having a plurality of openings therein, wherein the embedded patterned circuits and the via stud layers and the via opening layers are laminated together having at least some of the via studs aligned and contacted directly with some of the embedded patterned circuits.

2. (currently amended) The laminated substrate structure of claim 1, further comprising at least a two via opening layers, arranged as two most exterior dielectric layers of the dielectric layers laminated substrate structure.

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3. (currently amended) The laminated substrate structure of claim ~~12~~, wherein the via openings of the two via opening layers at least aligned with some of the via studs of the via stud layers adjacent to the two via opening layers ~~layer is a dielectric layer, and the dielectric layer has a plurality of openings.~~

4. (currently amended) The laminated substrate structure of claim ~~12~~, ~~whether~~ wherein the via opening layer is a solder mask layer, and the solder mask layer has a plurality of openings.

5. (currently amended) A laminated substrate structure, comprising:

a plurality of first dielectric layers, each of the first dielectric layers has a plurality of via studs; and

a plurality of second dielectric layers, each of the second dielectric layers has a plurality of circuit layers, ~~arranged in between the dielectric layers~~, wherein the second dielectric layers are laminated to the first dielectric layers and the circuit layers are electrically coupled to each other through the via studs ~~holes~~, wherein the via studs ~~holes~~ in the two most exterior dielectric layers are used as a plurality of solder pads directly.

6. (original) The laminated substrate structure of claim 5, wherein a pattern of the circuit layers is designed as landless.

7. (currently amended) The laminated substrate structure of claim 5, further comprising at least a via opening layer, respectively arranged on the two most exterior dielectric layers ~~of the dielectric layers~~.

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8. (original) The laminated substrate structure of claim 7, wherein the via opening layer is a dielectric layer, and the dielectric layer has a plurality of openings.

9. (currently amended) The laminated substrate structure of claim 7, ~~whether~~ wherein the via opening layer is a solder mask layer, and the solder mask layer has a plurality of openings.

Claims 10-27 (cancelled)